SECTION 08710

DOOR HARDWARE

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

1. Work under this section comprises of furnishing and installing commercial door hardware needed for a complete and operational system for following:
   a. Swinging doors
2. Electrified door hardware

B. Related Sections:

1. Section 081113 Hollow Metal Doors and Frames
2. Section 081416 Flush Wood Doors
3. Section 084113 Aluminum-Framed Entrances and Storefronts

1.2 REFERENCES

A. Publications listed herein are part of this specification to extent referenced.

B. American National Standards Institute:

1. ANSI A156 Series
2. ANSI A115W Wood Door Hardware Standards; Hardware Preparation
3. ANSI A115 Specifications for Steel Door and Frame Preparation for Hardware
4. ANSI A117.1 Accessible and Usable Buildings and Facilities
5. ANSI A250.6 Hardware on Steel Doors (Reinforcement - Applications)

C. Americans with Disabilities Act Accessibility Guidelines (ADAAG)

D. Door and Hardware Institute:

1. DHI Publication - Abbreviations and Symbols
2. DHI Publication - Basic Architectural Hardware
3. DHI Publication - Hardware for Labeled Fire Doors (with supplements)
4. DHI Publication - Hardware Reinforcements on Steel Doors and Frames
5. DHI Publication - Installation Guide for Doors and Hardware
6. DHI Publication - WDHS-1 Template Book Criteria for Wood Doors
7. DHI Publication - WDHS-3 Recommended Hardware Locations for Wood Flush Doors
8. DHI Publication - For Processing Hardware Schedules and Templates

E. National Fire Protection Association:

1. NFPA 70 National Electrical Code
2. NFPA 80 Standard for Fire Doors and Windows

F. Steel Door Institute:

1. SDI-109 Hardware for Standard Steel Doors and Frames

G. Underwriters Laboratories, Inc.

1. UL Standard 10C Positive Pressure Fire Tests of Door Assemblies
2. UL Building Materials Directory

H. Virginia Uniform Statewide Building Code

1.3 SUBMITTALS

A. Submittal Sequence:

1. Submit final Door Hardware Schedule at earliest possible date, particularly where approval of Door Hardware Schedule must precede fabrication of other work that is critical in Project construction schedule.
2. Include Product Data, Samples, Shop Drawings of other work affected by door hardware, and other information essential to coordinated review of Door Hardware Schedule.

B. Product Data:

1. Submit manufacturer's technical product fact sheets describing each item of hardware to be provided including material descriptions, dimensions of individual components and profiles, and finishes.

C. Door Hardware Schedule:

1. Submit door hardware schedule prepared by or under supervision of a DHI certified Architectural Hardware Consultant (AHC) or Certified Door Consultant (CDC) detailing fabrication and assembly of door hardware, as well as procedures and diagrams.
2. Coordinate Door Hardware Schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.
3. Format:
    a. Comply with scheduling sequence and vertical form as described in DHI's *Sequence and Format for the Hardware Schedule*.
    b. Horizontal hardware schedules are not acceptable.
    c. Submit 4 copies of hardware schedule.
4. Organization:
    a. Organize door hardware schedule into hardware sets indicating complete designations of every item needed for each door or opening.
    b. Organize door hardware sets in same order as in Door Hardware Schedule contained in Part 3 of this specification.
    c. For doors of different sizes or where hinges, locks, or closers are different, a separate heading shall be used. No labeled openings shall be combined with non-labeled openings.
5. Content:
    a. Type, style, function, size, label, hand, and finish for each door hardware item
    b. Name and manufacturer of each item
    c. Fastenings and other pertinent information
    d. Location of each door hardware set, cross-referenced to Drawings, both on floor plans and in door and frame schedule
    e. Explanation of abbreviations, symbols, and codes contained in schedule
    f. Mounting locations for door hardware
    g. Door and frame sizes and materials

D. Shop Drawings:

1. Provide a copy with each hardware schedule submitted.
    a. Electrical components shall be listed by opening in hardware submittals.

2. Submit details of interface between electrified door hardware and following:
    a. Fire alarm system
    b. Access control system
    c. Security system
    d. Building control system
3. Provide description of each electrified door hardware function, including location, sequence of operation, and interface with other building control systems; include description of component functions that occur in following situations:
    a. Authorized person wants to enter
    b. Authorized person wants to exit
    c. Unauthorized person wants to enter
    d. Unauthorized person wants to exit
4. Provide elevation drawings of electronic hardware and systems identifying locations of system components with respect to their placement in door opening.
    a. Indicate mounting heights and locations of electronic components listed by opening in hardware submittals.
5. Wiring Diagrams:
    a. Submit detail wiring for power, signal, and control systems for all openings needing electrified hardware, except openings where only magnetic hold-opens are specified. Differentiate between manufacturer-installed and field-installed wiring. Include following:
        (1) System schematic
        (2) Point-to-point wiring diagram
        (3) Riser diagram
        (4) Elevation of each door

E. Samples:

1. Submit samples of door hardware items if requested by Architect. Accepted samples may be incorporated into Work.

F. Quality Assurance Submittals:

1. Test Reports:
    a. Provide product test reports based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified testing agency, indicating current products comply with requirements.
2. Certificates:
    a. Submit Product Certificates signed by manufacturers of electrified door hardware certifying that electronic hardware and systems being furnished comply with specified requirements.
    b. Submit a statement from manufacturer certifying that door hardware is approved for use on types and sizes of labeled fire doors and complies with listed fire door assemblies.
3. Manufacturer's Instructions:
    a. Submit instructions for installation and maintenance of operating parts and finish.
    b. Furnish templates and schedules needed for fabrication of hollow metal doors and frames, wood doors and frames, and other items related to hardware.
    c. Submission for templates and template list shall follow procedures established by DHI publication *For Processing Hardware Schedules and Templates*.

G. Closeout Submittals:

1. Operation and Maintenance:
    a. Provide operation and maintenance data for electrically operated and non-electrical hardware consisting of technical information as follows:

(1) Maintenance instructions for each item of hardware
(2) Catalog pages for each product
(3) Parts list for each product
(4) Copy of final hardware schedule
(5) Copy of final keying schedule

b. Provide complete operational descriptions of electronic components listed by opening in hardware submittals.
(1) Operational descriptions shall detail how each electronic component functions within opening incorporating conditions of ingress and egress.
(2) Provide complete point-to-point wiring diagrams for electronic components listed by opening in hardware submittals.

c. Include a copy of operational and maintenance descriptions in Operation and Maintenance Data Manual.

2. Warranties:
a. Submit Special warranties specified in this Section.

3. Keying Schedule:
a. Prepare and submit a keying schedule using keyset symbols referenced in DHI manual *Keying Systems and Nomenclature*. Include schematic keying diagram and index each key set to unique door designations.
(1) Index keying schedule by door number, keyset, hardware heading number, cross keying instructions, and special key stamping instructions.

b. Provide one complete bitting list of key cuts.
c. Keying schedule shall be prepared by or under supervision of supplier, detailing Owner's final keying instructions for locks.
d. Submit 4 copies of keying schedule.

4. Deliver keys to Owner by registered mail or overnight package service.

1.4 QUALITY ASSURANCE

A. Qualifications:

1. Door Hardware Supplier:
a. Door hardware supplier shall have warehousing facilities in Project's vicinity and shall employ a qualified Certified Architectural Hardware Consultant (AHC) available during course of Work to consult with Contractor, Architect, and Owner about door hardware and keying.
b. Electrified Door Hardware:
(1) Supplier shall be an experienced door hardware supplier who has completed projects with electrified door hardware similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance, and who is acceptable to manufacturer of primary materials.
(2) Supplier shall prepare data for electrified door hardware, including shop drawings, based on testing and engineering analysis of manufacturer's standard units in assemblies similar to those indicated for this Project.

2. Architectural Hardware Consultant:
a. Architectural Hardware Consultant shall be a person who is currently certified by Door and Hardware Institute as an Architectural Hardware Consultant (AHC) and who is experienced in providing consulting services for door hardware installations that are comparable in material, design, and extent to that indicated for this Project.
b. Architectural Hardware Consultant shall be experienced in providing consulting services for electrified door hardware installations.

3. Installer:
a. Door hardware shall be installed by an experienced installer who has completed door hardware similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.

4. Single Source Responsibility:
   a. Obtain each type and variety of door hardware from a single manufacturer, unless otherwise indicated.
   b. Provide electrified door hardware from same manufacturer as mechanical door hardware, unless otherwise indicated.
   c. Manufacturers that are listed to perform electrical modifications, by a testing and inspecting agency acceptable to authorities having jurisdiction, shall be acceptable.

B. Regulatory Requirements:

1. Hardware and installation shall comply with provisions and standards listed.
2. Virginia Uniform Statewide Building Code
3. Federal Accessibility Regulations:
   a. Americans with Disabilities Act - ADA
   b. Uniform Federal Accessibility Standards - UFAS
   c. ANSI A117.1 Standard for Accessible and Usable Building s and Facilities
   d. Accessibility Guidelines for Buildings and Facilities (ADAAG)
4. National Fire Protection Association:
   a. NFPA 80 Standard for Fire Doors and Windows
5. Underwriters Laboratories Inc.:
   a. UL 10C Positive Pressure Fire Tests of Door Assemblies
6. ANSI/BHMA Standards
   a. A115-W Series
   b. A115 Series
   c. A156 Series:
7. Door and Hardware Institute:
   a. Abbreviations and Symbols
   b. Basic Architectural Hardware
   c. Hardware for Labeled Fire Doors (with supplements)
   d. Hardware Reinforcements on Steel Doors and Frames
   e. Installation Guide for Doors and Hardware
   f. WDHS-1 Template Book Criteria for Wood Doors
   g. WDHS-3 Recommended Hardware Locations for Wood Flush Doors

C. Certifications:

1. Hardware used in labeled fire or smoke rated openings shall bear identifying label or mark indicating listing by Underwriters Laboratories, Inc., ITS (Warnock Hersey International), or other nationally recognized organizations acceptable to authority having jurisdiction.
2. Provide door hardware for fire-rated door assemblies complying with NFPA 80, and VUSBC requirements.
3. Electrified door hardware shall be listed and labeled as defined in NFPA 70, Article 100.

D. Pre-Installation Meetings:

1. Conduct conference on-site to comply with requirements in Division 1 for Project Meetings.
2. Topics to be discussed at meeting shall include:
   a. Review items such as proper installation sequence, adjustments, attachment, and location of door hardware.
   b. Review methods and procedures related to electrified door hardware including but not limited to following:
      (1) Inspect and discuss electrical roughing-in and other preparatory work performed by other trades.
      (2) Review sequence of operation for each type of electrified door hardware.
      (3) Review required testing, inspecting, and certifying procedures.

c. Review and finalize construction schedule and verify availability of materials, installer's personnel, equipment, and facilities needed to make progress and avoid delays.

E. Keying Conference:

1. Conduct conference on-site to comply with requirements in Division 1 for Project Meetings. Participants shall be Owner's representative, Contractor, hardware supplier, and lock manufacturer's representative.
2. Incorporate keying conference decisions into final keying schedule after reviewing door hardware keying system including but not limited to following:
    a. Function of building, flow of traffic, purpose of each area, degree of security needed, and plans for future expansion
    b. Preliminary key system schematic diagram
    c. Requirements for key control system
    d. Address for delivery of keys

F. Coordination:

1. Templates:
    a. Obtain and distribute templates for doors, frames, and other work specified to be factory prepared for installing door hardware to parties involved.
    b. Check shop drawings of other work to confirm that adequate provisions are made for locating and installing door hardware to comply with specified requirements.
2. Electrical System Roughing-In:
    a. Coordinate layout and installation of electrified door hardware with connections to power supplies, fire alarm system and detection devices, access control system, security system, building control system.
    b. Refer to work specified in Division 16 applicable to electrified hardware items including, but not limited to conduit, pull boxes, wiring, and final connections.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Packing, Shipping, Handling, and Unloading:

1. Inventory door hardware on receipt and provide secure lock-up for door hardware delivered to Site.
2. Tag each item or package separately with identification related to final Door Hardware Schedule, and include basic installation instructions with each item or package.

1.6 SPECIAL WARRANTY

A. Provide written warranty, executed by manufacturer agreeing to repair or replace components of door hardware that fail in materials or workmanship within specified warranty period. Failures include but are not limited to following:

1. Structural failures including excessive deflection, cracking, or breakage
2. Faulty operation of operators and door hardware
3. Deterioration of metals, metal finishes, and other materials beyond normal weathering

B. Warranty period shall be for not less than 3 years from Date of Substantial Completion unless otherwise indicated.

1. Locks: 3 years
2. Manual Closers: 10 years
3. Exit Devices: 10 years

C. Special warranties specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of Contract Documents.

1.7 MAINTENANCE

A. Maintenance Service:

1. Beginning at Substantial Completion, provide 12 months' full maintenance by skilled employees of door hardware installer.
   a. Include quarterly preventive maintenance, repair or replacement of worn or defective components, lubrication, cleaning, and adjusting as needed for proper door hardware operation.
   b. Provide parts and supplies as used in manufacture and installation of original products.
2. Furnish a complete set of specialized tools and maintenance instructions as needed for Owner's continued adjustment, maintenance, and removal and replacement of door hardware.

PART 2 PRODUCTS

2.1 MATERIALS

A. General Requirements:

1. Hardware shall be of best grade, entirely free of imperfections in manufacture and finish, and shall satisfactorily perform various functions needed.
2. Furnish necessary screws, bolts or others fastenings of suitable size and type to anchor hardware in position and match hardware as to material and finish. Provide Phillips flat-head screws except as otherwise indicated.
3. Do not use through-bolts for installations where bolt head or nut opposite face is exposed in other work. Use of sex bolts shall not be allowed.
4. Drawings show direction of slide, swing or hand of each door leaf. Furnish each item of hardware for proper installation and operation of door movement as indicated. Items of hardware not definitely specified, but needed for satisfactory installation of hardware shall be provided. Such items shall be of type and quality suitable for service needed and comparable to adjacent hardware.
5. Finishes shall comply with ANSI A156.18/ BHMA 1301. Finish designations cross references shall be as follows:

BHMA Code	Description	Nearest US Equiv.	BHMA Category	Basis Metal
626	Satin chromium plated	US26D	A	Brass; Bronze
628	Satin aluminum, clear anodized	US27	A	Aluminum
630	Satin stainless steel	US32D	A	Stainless Steel
652	Satin chromium plated	US26D	E	Steel
689	Aluminum painted	US28	E	Any

B. Substitutions:

1. Manufacturers and model numbers are to establish the standard of quality and design. No other products will be accepted.

2.2 HINGES

A. Butt Hinges: ANSI/ BHMA A156.1

1. Provide full mortise, template, 5-knuckle, button tip hinges with non-rising loose pins and ball type bearings.
2. Out-swinging exterior doors shall be furnished with solid bronze or stainless steel, hinges with non-removable pins or security studs.
3. Interior doors with locksets shall be furnished with non-removable pins hinges.
4. Hinges shall be furnished in following quantities:
   a. Doors up to 90" in height: 3 hinges
   b. Doors over 90" in height: Add 1 hinge for every additional 30"
5. Furnish hinge sizes not less than as follows:
   a. For 1 3/4" Thick Doors: Standard weight
      (1) Doors up to 3'-6" wide: 4 1/2 x 4 1/2 x 0.134 gauge
6. Furnish hinges of sufficient throw where needed to clear trim or permit doors to swing 180 degrees.
7. Finishes:
   a. Exterior Doors: BHMA #630 (US32D)
   b. Interior Doors: BHMA #652 (US26D)
8. Acceptable Manufacturers:

	Steel	Stainless Steel
a. Bommer:	BB5000	BB5002
b. McKinney:	TB2714	TB2314
c. H. B. Ives:	5BB1	5BB1

B. Pin and Barrel Continuous Hinges: ANSI/ BHMA A156.26 Grade 1

1. Provide full mortise, non-handed, full height hinges with symmetrically templated hole pattern made from 14 gauge, 304 stainless steel.
2. Each knuckle shall be approximately 2", including split nylon bearing at each separation.
3. Pin Diameters: 1/4"
4. External Barrel Diameter; 7/16"
5. Finish: BHMA #630 (US32D)
6. Acceptable Manufacturers:
   a. Ives: 700
   b. Markar: FM 300
   c. Zero: 919 STST

C. Geared Continuous Hinges: ANSI/ BHMA A156.26 Grade 1

1. Provide full mortise, non-handed, full height hinges with interlocking cover and symmetrically templated hole pattern made from extruded aluminum.
2. Finish: BHMA #628 (US27)
3. Acceptable Manufacturers:
   a. Ives: 112HD
   b. Select: SL11HD
   c. Zero: 910 DB AA

2.3 LOCKSETS AND LATCHSETS

A. General Requirements:

1. Shape of lever shall be easy to grasp with one hand and not require tight grasping, tight pinching, or twisting of wrist.
2. Locksets and latchsets shall not require more than 15 lbf to release latch. Locks shall not require use of a key, tool, or special knowledge for operation.

3. Provide manufacturer’s standard wrought box strike for each latchset and lockset with curved lip extended to protect frame without catching clothing. Finish shall match hardware set.
4. Provide all doors with hi-security patented full sized interchangeable core cylinders.

B. Mortise Locksets and Latchsets:

1. Provide heavy duty mortise locksets and latchsets that comply to ANSI A156.13, Series 1000, Operational Grade 1 and Security Grade 1 with all standard trims.
2. Provide mortise locksets that comply with UL10C and UBC 7-2 positive pressure requirements.
3. Lock case shall be manufactured from fully wrapped, heavy 12 gauge steel to limit access to operating parts. Manufacturers utilizing an exposed edge case are not acceptable.
4. Lock components shall be manufactured from zinc dichromate plated steel. Manufacturers utilizing plastic parts, spacers, and/or bushings are not acceptable.
5. Locksets are to have a standard 2 3/4” backset with a full 3/4” throw latchbolt. Deadbolt shall be 1-3/4” total length with a full 1” throw, constructed of stainless steel with anti saw roller insert.
6. Latchbolts are to be 2-piece anti-friction, manufactured from stainless steel. Solid latchbolts and/or plastic anti friction devices are not acceptable.
7. Lever assembly (external) to be one-piece design attached by threaded bushing. Lever assembly (internal) shall be attached by screwless shank. Lever attachment by common tools (allen nuts and/or set screws) are not acceptable.
8. Lock trim shall be through-bolted to door to assure correct alignment a proper operation and positive interlock. Manufacturers utilizing a through the door spindle for attachment are not acceptable.
9. Hub blocking plate to be solid cast stainless steel. Manufacturers utilizing open hub designs are not acceptable.
10. Strikes to be non handed and bridged to ensure dead latching. Manufacturers utilizing fillers of any kind for dead latch engagement are not acceptable.
11. Cylinders shall be secured by a retainer.
12. Finish: BHMA #626 (US26D)
13. Acceptable Manufacturers:
    a. Schlage: L9000 Series with 17A lever design
    b. Falcon: M Series with Quantum lever design
    c. Best Lock: 40H series with 14H lever design.

2.4 EXIT DEVICES

A. Exit Devices: ANSI/ BHMA A156.3, Grade 1

ALL EXIT DEVICES TO BE TOUCH BAR AS SPECIFIED.

1. Furnish roller strikes for all rim exit devices.
2. All mounting fasteners to be concealed. Devices to be non-handed or field reversible.
3. Furnish stainless steel latchbolt with 3/4” throw and security deadlatching for all rim and surface vertical rod exit devices.
4. Furnish center case with heavy wrought and sintered parts and stamped cold roll steel chassis with a thickness of .090”
5. Device cover, stainless steel, 0.048” thick or brass, 0.050” thick.
6. Furnish stainless steel or brass touch pad cover on all exit devices.
7. Mechanism housing, extruded aluminum with 0.080” thickness and extruded aluminum cover with 0.152” thickness.
8. The end cap to be cast or forged material and is not to overlap the mechanism case.
9. Have no exposed rivets or screws on back of device that would be visible through a glass light.

10. Doors greater than 3’0” (915mm) provide long bar exit devices, doors greater than 7’0” (2134mm) supply extension rods for required series.
11. 10 year manufacturer standard warranty
12. Escutcheons for all lever trim to be deep drawn stainless steel or brass with (4) thru-bolts anchoring trim assembly to exit device chassis.
13. Levers to be brass, cast or forged.
14. Lever return springs to be compression type.
15. Protect lever trim by a shear pin, which will withstand a rotational force of 35 ft.-lbs before shearing. The lever is not to separate from the escutcheon.
16. Trim escutcheon to be deep drawn stainless steel or brass.
17. Trim shall meet ANSI/BHMA 156.3 Trim Security Test.
18. Vertical rod devices to be UL, cUL labeled for fire door applications without the use of bottom rod assemblies. Where bottom rods are required for security applications, device shall be UL, cUL labeled for fire door applications.
19. Fire exit devices mounted on labeled wood doors to be thru-bolt mounted in compliance with door manufacturer’s requirements. Where special blocking has been specified in wood door specification, do not thru-bolt exit devices.
20. Acceptable Manufacturers:
    a. Falcon: 25 series
    b. Von Duprin: 98 series
    c. Sargent: GL-19-43-80 series

2.5 DOOR CLOSERS

A. General Requirements:

1. Closers shall be sealed and filled with all-weather fluid. Provide stable hydraulic fluid to withstand a temperature range of 120 degrees F to minus 30 degrees F.
2. Size closers in compliance with requirements for accessibility for handicapped and recommendations of manufacturer. Provide barrier free and delayed action features as needed. Comply with following maximum opening-force requirements:
    a. Interior Hinged Doors: 5.0 lbs.
    b. Exterior Hinged Doors: 8.5 lbs.
    c. Fire Doors: Minimum opening force allowable by authorities having jurisdiction

B. Surface Closers: ANSI/ BHMA A156.4, Grade 1

1. Surface mounted closers shall be full rack-and-pinion type closer with full complement bearings, single piece forged piston, chrome silicon steel spring, non-critical screw valves; back check, sweep and latch.
2. Furnish closers complete with rectangular, non-ferrous covers, necessary brackets and fasteners for top of door surface mounted units.
3. Closer finish shall be powder coated for better corrosion resistance. Painted finishes will not be accepted.
4. Closer products with any type of pressure relief valve system shall not be acceptable.
5. Closers shall be ISO 9000 certified. Units shall be stamped with date of manufacturer code.
6. Closers shall be non-sized, field adjustable from size 1 to 6.
7. Furnish non-sized closers with 1 1/2” diameter piston.
8. Do not through-bolt if there has been special blocking specified in wood door specification; refer to Section 08210.
9. Locate closers on interior side of exterior doors and on non-public side of interior doors, unless otherwise specified.
10. Provide manufacturers heaviest duty arm available at doors scheduled with parallel arm applications.
11. Provide plates, brackets and special templates when needed for interface with particular header door and wall conditions and adjacent hardware.

12. Closers shall be tested to 100 hours of salt spray test in compliance with ASTM B117; furnish data on request.
13. Acceptable Manufacturers:
    a. Falcon: SC71 series
    b. LCN: 4010/4110 series
    c. Norton: 7500 series

2.6 FLUSHBOLTS

A. Flushbolts: ANSI/ BHMA A156.16

1. Provide minimum 1/2” diameter rods of brass or stainless steel, with minimum 12” long rods for doors up to 7’-0” in height. Provide longer rods as needed for doors exceeding 7’-0” in height.
2. Provide dustproof strikes for bottom flushbolt applications, except where special threshold construction provides non-recessed strike for bolt.
3. Finish: BHMA #626 (US26D)
4. Acceptable Manufacturers:
    a. Ives: FB458
    b. Rockwood: 555
    c. Trimco: 3917

B. Automatic Flushbolts: ANSI/ BHMA A156.16

1. Provide automatic flushbolts for bottom of door and for top of door. When active leaf is opened bottom automatic flushbolts open.
2. Provide dust-proof strikes as scheduled for bottom flushbolt applications.
3. Provide coordinator as scheduled for proper door sequencing.
4. Finish: BHMA #630 (US32D)
5. Acceptable Manufacturers:
    a. Ives: FB31B
    b. Rockwood: 1842
    c. Trimco: 3810

2.7 PUSH PLATES, PULL BARS, AND GRIPS

A. General Requirements: ANSI/ BHMA A156.6

1. Provide concealed mounting where possible. Where exposed fasteners are used, they shall be countersunk.
2. Push plates shall be beveled on four edges.
3. Where applicable plates shall be prepared to receive cylinder locks or thumb turns as scheduled.
4. Finish: BHMA #630 (US32D)

B. Push Plates:

1. Size: 4” x 16”
2. Thickness (US GA): 18 gauge; .050”
3. Acceptable Manufacturers:
    a. Ives: 8200
    b. Rockwood: 70C
    c. Trimco: 1001-3

C. Pull Plates:

1. Size: 4” x 16”
2. Thickness (US GA): 18 gauge; .050”
3. Pull Size: 1” diameter; 10” center-to-center
4. Acceptable Manufacturers:
   a. Ives: 8303-0
   b. Rockwood: 111 x 70C
   c. Trimco: 1017

D. Pull Bars: Offset “D” pull

1. Size: 3/4” diameter
2. Projection: 2 1/2”
3. Mounting: 10” center-to-center
4. Acceptable Manufacturers:
   a. Trimco: 1191-3
   b. Rockwood: BF157
   c. Ives: 8190-0

2.8 DOOR PROTECTION DEVICES

A. General Requirements: ANSI/ BHMA A156.6

1. Fabricate protection plates (armor, kick, or mop) not more than 2 ” less than door width on stop side and not more than 2” less than door width on pull side, x height indicated.
2. Protection plates shall be beveled on three edges.
3. Furnish protection plates for concealed mounting where possible. Where exposed fasteners are used, they shall be countersunk.
4. Metal Plates: Stainless steel
   a. Thickness (US GA): 18 gauge; .050”
5. Finish: BHMA #630 (US32D)

B. Kick Plates:

1. Size: 10”
2. Acceptable Manufacturers:
   a. Ives: 8400
   b. Rockwood: K1050
   c. Trimco: K0050

2.9 OVERHEAD STOPS AND HOLDERS

A. Surface Mounted Overhead Holders/Stops: ANSI/ BHMA A156.8

1. Description: Medium-duty extruded brass, bronze or stainless steel stop/holders with shock absorber and no plastic parts
2. Finish: BHMA #630 (US32D)
3. Acceptable Manufacturers:
   a. ABH: 4420 Series
   b. GJ: 450 Series
   c. Rixson: Medium Duty 10 Series

2.10 SEALS AND GASKETS

A. General Requirements: ANSI/ BHMA A156.22

1. Door Sweeps:
   a. NGP as listed in sets

b. Equal by Pemko or Reese
2. Weather-stripping:Apply to head and jamb stops.
   a. NGP as listed in sets
   b. Equal by Pemko or Reese
3. Meeting Stile Weather-stripping:
   a. NGP as listed in sets
   b. Equal by Pemko or Reese
4. Fire and Smoke Seals: Gaskets must comply with fire door assembly manufacture's installation instructions for use on (Category 'A') 20, 45, 60, 90 minute wood door assemblies. Perimeter Seals:
   a. NGP as listed is sets
   b. Pemko
   c. Reese

2.11 THRESHOLDS

A. General Requirements: ANSI/ BHMA A156.21

1. Except as otherwise indicated provide standard threshold units of type, size and profile as shown or scheduled.
2. Metal: Extruded aluminum; 6063-T5 alloy
   a. Finish: Clear anodized; BHMA #628 (US27)
3. Provide bumper seal thresholds with silicone foot seals.
4. Provide thresholds that are 1" wider than depth of frame.
5. Acceptable Manufacturers:
   a. NGP
   b. Pemko
   c. Reese

2.12 AUXILIARY HARDWARE

A. Silencers: ANSI/ BHMA A156.16

1. Furnish tamper proof resilient cushions designed to absorb shock and noise at openings without gaskets.
2. Provide 3 silencers per single door, and 2 for pairs of doors.
3. Acceptable Manufacturers:
   a. Ives: SR64
   b. Rockwood: 608
   c. Trimco: 1229A

B. Wall Bumpers: 2 1/2" diameter; 1" nominal projection

1. Finish: BHMA #626 (US26D)
2. Acceptable Manufacturers:
   a. Ives: WS407CCV
   b. Rockwood: 409
   c. Trimco: 1270WV

C. Interior Floor-Mounted Stops: Dome stops with risers; 1" height

1. Finish: BHMA #626 (US26D)
2. Acceptable Manufacturers:
   a. Ives: FS436
   b. Rockwood: 440
   c. Trimco: 1200

2.13 ACCESSORY HARDWARE

A. Key Cabinet:

1. Type: Two tag system with triple cross reference
2. Capacity: 150% greater than number of door keys needed
3. Provide a key cabinet complete with accessories set up with keys and hooks tagged, keys installed, and index cards completed. Install key cabinet in location as indicated on Drawings or as directed by Owner.
4. Acceptable Manufacturers:
   a. Bommer: BKC Series
   b. Lund: Lund Key Box
   c. Salsbury: Model 1010

B. Key Keeper (knox box):

1. Type: Recessed mounted
2. Size (w x h x d): 6 1/2" x 6 1/2" x 5"
3. Finish: Satin aluminum
4. Provide key keepers for use by fire department. Install key keepers in compliance with authority having jurisdiction at locations indicated on Drawings or as directed by Owner.
5. Acceptable Manufacturers:
   a. Knox: 3200 series x RMK or equal

2.14 ELECTRICALLY OPERATED HARDWARE

A. General Requirements:

1. Electrically operated locking devices shall be connected to building fire and smoke/heat alarm systems. Activation of alarm system shall disengage electric locking mechanism allowing free, unrestricted egress through opening.
2. Coordinate installation of electrically operated hardware to insure proper size wire is used to power load(s).
   a. Voltage drop shall not exceed 5% of load's stated voltage.
   b. Voltage drop shall be calculated by first determining resistance of load (R=E/I voltage divided by AMP draw). Next, determine resistance of wire (per below chart). Divide this number by resistance of load. If result exceeds 5%, wire thickness shall be increased.
   c. Wire length shall equal distance to load and back to supply (Lock 50 ft. from power supply; wire length = 100 ft.). Two loads powered by one pair of wires draw double current and have half (50%) of resistance.

Wire Size	Resistance Per 1,000 Feet
12 Gauge	1.6 OHM
14 Gauge	2.5 OHM
16 Gauge	4.1 OHM
18 Gauge	6.4 OHM
20 Gauge	10.1 OHM
22 Gauge	16.0 OHM

3. Furnish electrically operated hardware with power supply units, junction boxes, and other accessories needed for a complete, efficient installation.
4. Power Supply Units:
   a. Power supply units shall be designed for electromagnetic locks, electric locking or monitoring exit devices, and/or electric strikes as needed.

b. Output power shall be field selectable for either 24 volts DC at 1 ampere or 12 volts DC at 2 amperes. Input power shall be 120 volts AC at 0.6 ampere, unless otherwise indicated.
c. Units shall have a terminal block that shall accept 14 gauge stranded wire.
d. Enclosure shall have not less than six, 1/2" knock-out holes for conduit connection.

B. Power Transfer Devices:

1. Provide a means to transfer power from frame to door stile. Devices shall be reversible and allow a full 180° door swing with 4 1/2" x 4 1/2" butt hinges or 3/4" offset pivots. When door is in closed position, transfer unit shall be concealed.
2. Transfer units shall contain ten 24 awg UL approved conductors.
3. Rating: 10 Amps at 24 vdc (Class 1 low voltage)
4. Acceptable Manufacturers:
   a. Securitron: EPT
   b. Von Duprin: EPT10

C. Electric Strikes: ANSI/ BHMA A156.5, Grade 1

1. Electric strikes shall be listed by UL for burglary resistance.
2. Strikes shall be for use with mortise locks without deadbolt or cylindrical locks on single door; hollow metal or aluminum frame application.
3. Operation shall be fail safe.
4. Power Requirements: 24 VDC
5. Finish: BHMA #630 (US32D)
6. Acceptable Manufacturers:
   a. Adams-Rite: 7900 Series
   b. Locknetics: 9000 Series
   c. Von Duprin: 6200 Series

2.15 CYLINDERS, KEYING SYSTEMS AND KEY CONTROL

A. General Requirements:

1. Meet with Architect and Owner to finalize keying requirements and obtain keying instructions in writing. Keying schedule shall be established in compliance with specific requirements determined in consultation with Owner.
2. Keys and key blanks shall be protected by one or more utility patents. This protection shall extend at least into year 2024.
3. Cylinders shall incorporate a dual mechanism to check for patented features on keys.
4. Cylinders shall be from same manufacturer as locks.
5. Provide temporary construction keying system during construction period. Permanent keys shall be furnished to Owner's Representative prior to occupancy. Owner or Owner's Security Agent will void operation of construction keys.

B. Cylinders:

1. Permanent cylinders shall be keyed by manufacturer and configured into sets or subsets, master keyed or great grand master keyed as directed by Owner.
2. Permanent keys and cylinders shall be marked with applicable blind code for identification. These visual key control marks or codes shall not include actual key cuts.
   a. Key and cylinder identification stamping shall be approved by Architect and Owner. Failure to properly comply with these requirements shall be cause for replacement of cylinders and keys involved at no additional cost to Owner.

3. Equip locks and cylinders with patent protected, **Best Peaks interchangeable core cylinders**. Cylinders shall allow for multiplex master keying, configured to Owner's instructions.

C. Key Material:

1. Provide manufacturer's standard embossed keys of nickel silver with a minimum thickness of 0.092" to ensure durability. Key Quantity: Furnish keys in following quantities:
   a. Master Keys: 6 per master group
   b. Change Keys:
      (1) Locks Keyed Alike: 4 per set
      (2) Locks Keyed Different: 3 per lock
   c. Key Blanks: 6 per cylinder
   d. Temporary Construction Master Keys: 12 total
   e. Control Keys: 5 total
2. Deliver end user exclusive permanent key blanks and other security keys directly to Owner's representative from manufacturer by secure courier, return receipt requested. Failure to properly comply with these requirements shall be cause for replacement of cylinders and keys involved at no additional cost to Owner.

D. Acceptable Manufacturers:

1. **Cylinders and Keys: Best- Peaks interchangeable core cylinders- No Substitutions**

PART 3 EXECUTION

3.1 EXAMINATION

A. Site Verification of Conditions:

1. Examine doors and frames with Installer present for compliance with requirements for installation tolerances, labeled fire door assembly construction, wall and floor construction, and other conditions affecting performance.
2. Examine roughing-in for electrical power systems to verify actual locations of wiring connections before electrified door hardware installation.
3. Proceed with installation only after unsatisfactory conditions have been corrected.
4. Commencement of installation constitutes acceptance of conditions and responsibility for satisfactory performance.

3.2 PREPARATION

A. Surface Preparation:

1. Steel Doors and Frames: Comply with DHI A115 Series
   a. Surface-Applied Door Hardware: Drill and tap doors and frames in compliance with SDI 109
2. Wood Doors: Comply with DHI A115-W Series.

3.3 INSTALLATION

A. General Requirements:

1. Install each door hardware item to comply with manufacturers' written instructions using manufacturers' supplied fasteners.

2. Securely install finish hardware items in compliance with accepted schedule and templates furnished with hardware.
3. Install mortised items flush with adjacent surfaces.
4. Install locksets, surface mounted closers, and trim after finishing of doors and frames is complete.
   a. Where cutting and fitting is needed to install door hardware onto or into surfaces that are to be painted or finished in another way later, coordinate removal, storage, and reinstallation of door hardware with finishing work.
5. Set units level, plumb, and true to line and location. Adjust and reinforce attachment substrates as necessary for proper installation and operation.
6. Drill and countersink units not factory-prepared for anchorage fasteners. Space fasteners and anchors in compliance with industry standards.

B. Mounting Heights:

1. Mount door hardware units at heights indicated in following applicable publications, unless otherwise specifically indicated or required to comply with governing regulations:
   a. Steel Doors and Frames: ANSI A250.6
      (1) DHI Publication Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames
      (2) DHI Publication *Recommended Locations for Builders' Hardware for Custom Steel Doors and Frames*
   b. Wood Doors: DHI Publication WDHS-3

C. Electrically Operated Hardware:

1. Comply with manufacturer's instructions for wiring, grounding, and shielding.
2. Locate boxed power supplies as indicated or, if not indicated, above accessible ceilings. Verify location with Architect.
3. Provide one power supply for each door opening.

D. Door Stops:

1. Door stops shall be furnished for every door leaf. Install floor-mounted or wall-mounted stops, as scheduled. Overhead door holder shall be provided where floor or wall stops cannot be used.
2. Place door stops in such a position that they permit maximum door swing, but do not present a hazard or obstruction. Furnish floor strikes for floor holders of proper height to engage holders of doors.
3. Floor stops shall be installed with risers as needed to accommodate finish flooring materials for proper relationship to door.

E. Thresholds:

1. Set thresholds for exterior and acoustical doors in full bed of sealant in compliance with requirements specified in Division 7.

F. Key Control System:

1. Place keys on markers and hooks in key control system cabinet, as determined by final keying schedule.

3.4 ADJUSTING

A. Initial Adjustment:

1. Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.
2. Adjust electric strikes horizontal and vertical alignment of keeper to properly engage lock bolt.
3. Adjust door closer sweep period so that from an open position of 70 degrees door will take at least 3 seconds to move to a point 3" from latch measured to leading edge of door.

B. Final Adjustment:

1. Return to Project during week prior to Substantial Completion and make final check and adjustment of hardware items.
2. Adjust hardware so doors operate in perfect order. Test and adjust hardware for quiet, smooth operation, free of sticking, binding, or rattling. Adjust closers for proper, smooth operation.
3. Adjust door control devices to compensate for final operation of heating and ventilating equipment.

C. Six Month Adjustment:

1. Approximately six months after Date of Substantial Completion, installer shall perform following:
    a. Examine and readjust each item of door hardware as necessary to ensure function of doors, door hardware, and electrified door hardware.
    b. Consult with, and instruct, Owner's personnel on recommended maintenance procedures.
    c. Replace door hardware items that have deteriorated or failed due to faulty design, materials, or installation.

3.5 CLEANING

A. Exposed hardware shall be carefully cleaned by methods not injurious to finish, immediately preceding occupancy. Replace defective, damaged, or missing hardware.

B. Clean adjacent surfaces soiled by hardware installation.

C. Clean operating items as needed to restore proper function and finish.

3.6 DEMONSTRATION

A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain door hardware and door hardware finishes.

3.7 PROTECTION

A. Provide final protection and maintain conditions that ensure door hardware shall be without damage or deterioration at time of Substantial Completion.

B. Protect door hardware items from abuse, corrosion and other damage until Owner accepts Project as complete.

3.8 DOOR HARDWARE SCHEDULE

A. General Requirements:

1. To define requirements for materials, size, and design specific products manufactured by certain manufacturers are indicated in door hardware sets.
   a. Door hardware sets provide quantity, item, size, finish or color indicated and named manufacturer's product.
   b. Provide description of operation for all electrical hardware openings.

B. Hardware Sets: List of manufacturers represented in the hardware sets:

1. Hinges: H. B. Ives – 877-613-8766 – www.iveshardware.com (IVE)
2. Continuous Hinges: H. B. Ives – 877-613-8766 – www.iveshardware.com (IVE)
3. Flush Bolts: H. B. Ives – 877-613-8766 – www.iveshardware.com (IVE)
4. Cylinder & Keys: **Best – 800-711-6814 – www.bestaccess.com (BES)**
5. Locksets & Latchsets: Schlage – 800-864-1864 – www.schlage.com (SCH)
6. Exit Devices & FEH: Falcon- 800-266-4456- www.falcon.ingersollrand.com (FAL)
7. Push/Pull Bars: H. B. Ives – 877-613-8766 – www.iveshardware.com (IVE)
8. Push/Pull Plates: H. B. Ives – 877-613-8766 – www.iveshardware.com (IVE)
9. Surface Closers: Falcon – 800-266-4456 – www.falcon.ingersollrand.com (FAL)
10. Overhead Stop/Holders: Glyn-Johnson – 800-525-0336– www.glynn-johnson.com (GJH)
11. Wall & Floor Stops: H. B. Ives – 877-613-8766 – www.iveshardware.com (IVE)
12. Protective Plates: H. B. Ives – 877-613-8766 – www.iveshardware.com (IVE)
13. Thresholds: NGP- 800- NGP-RUSH- www.ngp.com (NGP)
14. Weatherstrip & Gasket: NGP- 800- NGP-RUSH- www.ngp.com (NGP)
15. Silencers: H. B. Ives – 877-613-8766 – www.iveshardware.com (IVE)
16. Electric Strikes: Von Duprin – 800-999-0408 – www.vonduprin.com (VON)
17. Power Supplies: Schlage Elec. – 866-322-1237 – www.schlage.com (SCE)

    Von Duprin – 800-999-0408 – www.vonduprin.com (VON)

SPECWORKS # 94104-B7C63SMMH

HW SET: 01

2	EA	POWER TRANSFER	EPT-10	689	VON
2	EA	CONTINUOUS HINGE	112HD EPT	628	IVE
1	EA	PANIC DEVICE	AE-25-C-EO	630	FAL
1	EA	PANIC DEVICE	AE-EL-25-C-NL-OP	630	FAL
1	EA	RIM CYLINDER	20-057-ICX	626	SCH
1	EA	PRIMUS CORE ONLY	20-740-XP	626	SCH
2	EA	OFFSET DOOR PULL	8190-0-O	630	IVE
2	EA	SURFACE CLOSER	SC71 SS	689	FAL
2	EA	MOUNTING PLATE	SC70-18PA	689	FAL
1	SET	SEALS	INTEGRAL SEALS BY FRAME MFR.		B/O
1	EA	THRESHOLD	896S	AL	NGP
1	EA	POWER SUPPLY	PS873-2	GRY	VON
1	EA		PROX CARD READER BY OTHERS		B/O

DOORS ARE NORMALLY CLOSED AND LOCKED. PRESENTING CARD TO READER WILL UNLOCK ACTIVE DOOR LEAF ALLOWING INGRESS. FREE EGRESS FROM BOTH DOORS AT ALL TIMES. "AE" IS A REQUEST TO EXIT SWITCH. "EL" IS ELECTRIC LATCH RETRACTION.

HW SET: 02

1	EA	POWER TRANSFER	EPT-10	689	VON
1	EA	CONTINUOUS HINGE	700 EPT	630	IVE
1	EA	EXIT ALARM	HWEA-25-R-EO	630	FAL
1	EA	PRIMUS CORE ONLY	20-740-XP	626	SCH
1	EA	MORTISE CYLINDER	26-091-ICX	626	SCH
1	EA	SURFACE CLOSER	SC71 SS	689	FAL
1	EA	KICK PLATE	8400 10" X 2" LDW	630	IVE
1	SET	SEALS	700SA	AL	NGP
1	EA	DOOR SWEEP	C627A	AL	NGP
1	EA	THRESHOLD	8426	AL	NGP
1	EA	POWER SUPPLY	PS861	GRY	VON

DOOR IS EQUIPPED WITH AN EMERGENCY EXIT ALARM PANIC DEVICE. DEPRESSING TOUCHBAR WILL SET OFF A CONTINUOUS ALARM. ALARM MAY BE RESET WITH CYLINDER INTEGRAL TO EXIT DEVICE.

HW SET: 03

2	EA	CONTINUOUS HINGE	112HD	628	IVE
1	EA	PANIC DEVICE	25-C-EO	630	FAL
1	EA	PANIC DEVICE	25-C-NL-OP	630	FAL
1	EA	RIM CYLINDER	20-057-ICX	626	SCH
1	EA	PRIMUS CORE ONLY	20-740-XP	626	SCH
2	EA	OFFSET DOOR PULL	8190-0-O	630	IVE
2	EA	SURFACE CLOSER	SC71 DS	689	FAL
2	EA	MOUNTING PLATE	SC70-18PA	689	FAL
1	SET	SEALS	INTEGRAL SEALS BY FRAME MFR.		B/O
1	EA	THRESHOLD	896S	AL	NGP

HW SET: 04

3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	OFFICE LOCK	L9050T 17A	626	SCH
1	EA	PRIMUS CORE ONLY	20-740-XP	626	SCH
1	EA	SURFACE CLOSER	SC71 DS	689	FAL
1	EA	MOUNTING PLATE	SC70-18PA	689	FAL
1	SET	SEALS	INTEGRAL SEALS BY FRAME MFR.		B/O

HW SET: 05

3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	OFFICE LOCK	L9050T 17A	626	SCH
1	EA	PRIMUS CORE ONLY	20-740-XP	626	SCH
1	EA	WALL STOP	WS407CCV	630	IVE

3	EA	SILENCER	SR64	GRY	IVE

HW SET: 06

3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	PUSH PLATE	8200 4" X 16"	630	IVE
1	EA	PULL PLATE	8303-0 4" X 16"	630	IVE
1	EA	SURFACE CLOSER	SC71 RW/PA	689	FAL
1	EA	KICK PLATE	8400 10" X 2" LDW	630	IVE
1	EA	WALL STOP	WS407CCV	630	IVE
1	SET	SEALS	INTEGRAL SEALS BY FRAME MFR.		B/O

HW SET: 07

3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	STOREROOM LOCK	L9080T 17A	626	SCH
1	EA	PRIMUS CORE ONLY	20-740-XP	626	SCH
1	EA	SURFACE CLOSER	SC71 HO/DS	689	FAL
1	EA	KICK PLATE	8400 10" X 2" LDW	630	IVE
3	EA	SILENCER	SR64	GRY	IVE

HW SET: 08

6	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
2	EA	MANUAL FLUSH BOLT	FB458	626	IVE
1	EA	DUST PROOF STRIKE	DP2	626	IVE
1	EA	STOREROOM LOCK	L9080T 17A	626	SCH
1	EA	PRIMUS CORE ONLY	20-740-XP	626	SCH
2	EA	OVERHEAD STOP	450S	630	GLY
1	SET	SEALS	INTEGRAL SEALS BY FRAME MFR.		B/O

HW SET: 08A

6	EA	HINGE	5BB1 4.5 X 4.5 NRP	652	IVE
2	EA	MANUAL FLUSH BOLT	FB458	626	IVE
1	EA	DUST PROOF STRIKE	DP2	626	IVE
1	EA	STOREROOM LOCK	L9080T 17A	626	SCH
1	EA	PRIMUS CORE ONLY	20-740-XP	626	SCH
2	EA	OVERHEAD STOP	450S	630	GLY
2	EA	SILENCER	SR64	GRY	IVE

HW SET: 09

3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	OFFICE LOCK	L9050T 17A	626	SCH
1	EA	PRIMUS CORE ONLY	20-740-XP	626	SCH
1	EA	WALL STOP	WS407CCV	630	IVE
1	SET	SEALS	INTEGRAL SEALS BY FRAME MFR.		B/O

HW SET: 09A

3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	STOREROOM LOCK	L9080T 17A	626	SCH
1	EA	PRIMUS CORE ONLY	20-740-XP	626	SCH
1	EA	ELECTRIC STRIKE	6211AL FSE EB 24VDC	630	VON
1	EA	SURFACE CLOSER	SC71 RW/PA	689	FAL
1	EA	WALL STOP	WS407CCV	630	IVE
1	SET	SEALS	INTEGRAL SEALS BY FRAME MFR.		B/O
1	EA	POWER SUPPLY	505-ULAC		SCE
1	EA		PROX CARD READER BY OTHERS		B/O

DOOR IS NORMALLY CLOSED AND LOCKED. PRESENTING CARD TO READER WILL UNLOCK DOOR ALLOWING INGRESS. FREE EGRESS AT ALL TIMES. ELECTRIC STRIKE WILL FAIL SECURE IN THE EVENT OF A POWER OUTAGE.

HW SET: 09B

3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	STOREROOM LOCK	L9080T 17A	626	SCH
1	EA	PRIMUS CORE ONLY	20-740-XP	626	SCH
1	EA	ELECTRIC STRIKE	6210 FSE EB 24VDC	630	VON
1	EA	SURFACE CLOSER	SC71 RW/PA	689	FAL
1	EA	WALL STOP	WS407CCV	630	IVE
3	EA	SILENCER	SR64	GRY	IVE
1	EA	POWER SUPPLY	505-ULAC		SCE
1	EA		PROX CARD READER BY OTHERS		B/O

DOOR IS NORMALLY CLOSED AND LOCKED. PRESENTING CARD TO READER WILL UNLOCK DOOR ALLOWING INGRESS. FREE EGRESS AT ALL TIMES. ELECTRIC STRIKE WILL FAIL SECURE IN THE EVENT OF A POWER OUTAGE.

HW SET: 10

3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	OFFICE LOCK	L9050T 17A	626	SCH
1	EA	PRIMUS CORE ONLY	20-740-XP	626	SCH
1	EA	SURFACE CLOSER	SC71 HW/PA	689	FAL
1	EA	MOUNTING PLATE	SC70-18	689	FAL
1	EA	WALL STOP	WS407CCV	630	IVE
1	SET	SEALS	INTEGRAL SEALS BY FRAME MFR.		B/O

HW SET: 11

3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	PASSAGE SET	L9010 17A	626	SCH
1	EA	WALL STOP	WS407CCV	630	IVE
3	EA	SILENCER	SR64	GRY	IVE

HW SET: 12

3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	STOREROOM LOCK	L9080T 17A	626	SCH
1	EA	PRIMUS CORE ONLY	20-740-XP	626	SCH
1	EA	SURFACE CLOSER	SC71 HW/PA	689	FAL
1	EA	KICK PLATE	8400 10" X 2" LDW	630	IVE
1	EA	WALL STOP	WS407CCV	630	IVE
3	**EA**	**SILENCER**	**SR64**	**GRY**	**IVE**

HW SET: 13

6	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	PANIC DEVICE	25-C-EO-LBR	630	FAL
1	EA	PANIC DEVICE	25-C-L-LBR	630	FAL
1	EA	PRIMUS CORE ONLY	20-740-XP	626	SCH
1	EA	MORTISE CYLINDER	26-091-ICX	626	SCH
2	EA	SURFACE CLOSER	SC71 HO/DS	689	FAL
2	EA	MOUNTING PLATE	SC70-18PA	689	FAL
1	SET	SEALS	INTEGRAL SEALS BY FRAME MFR.		B/O

HW SET: 14

3	EA	HINGE	5BB1 4.5 X 4.5 NRP	652	IVE
1	EA	STOREROOM LOCK	L9080T 17A	626	SCH
1	EA	PRIMUS CORE ONLY	20-740-XP	626	SCH
1	EA	ELECTRIC STRIKE	6210 FSE EB 24VDC	630	VON
1	EA	SURFACE CLOSER	SC71 HO/DS	689	FAL
3	EA	SILENCER	SR64	GRY	IVE
1	EA	POWER SUPPLY	505-ULAC		SCE
1	EA		PROX CARD READER BY OTHERS		B/O

DOOR IS NORMALLY CLOSED AND LOCKED. PRESENTING CARD TO READER WILL UNLOCK DOOR ALLOWING INGRESS. FREE EGRESS AT ALL TIMES. ELECTRIC STRIKE WILL FAIL SECURE IN THE EVENT OF A POWER OUTAGE.

HW SET: 15

3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	CLASSROOM LOCK	L9070T 17A	626	SCH
1	EA	PRIMUS CORE ONLY	20-740-XP	626	SCH
1	EA	SURFACE CLOSER	SC71 HW/PA	689	FAL
1	EA	WALL STOP	WS407CCV	630	IVE
1	SET	SEALS	INTEGRAL SEALS BY FRAME MFR.		B/O

HW SET: 16

3	EA	HINGE	5BB1 4.5 X 4.5 NRP	652	IVE
1	EA	PANIC DEVICE	25-R-L	630	FAL

1	EA	PRIMUS CORE ONLY	20-740-XP	626	SCH
1	EA	MORTISE CYLINDER	26-091-ICX	626	SCH
1	EA	SURFACE CLOSER	SC71 HO/DS	689	FAL
1	EA	KICK PLATE	8400 10" X 2" LDW	630	IVE
1	SET	SEALS	INTEGRAL SEALS BY FRAME MFR.		B/O

HW SET: 17 - NOT USED

HW SET: 18

3	EA	HINGE	5BB1 4.5 X 4.5 NRP	652	IVE
1	EA	PANIC DEVICE	25-R-L-NL	630	FAL
1	EA	PRIMUS CORE ONLY	20-740-XP	626	SCH
1	EA	MORTISE CYLINDER	26-091-ICX	626	SCH
1	EA	SURFACE CLOSER	SC71 HO/DS	689	FAL
1	EA	KICK PLATE	8400 10" X 2" LDW	630	IVE
1	SET	SEALS	5050B	BRN	NGP
1	EA	DOOR SWEEP	C607A	AL	NGP

HW SET: 19

3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	PRIVACY SET	L9040 17A	626	SCH
1	EA	WALL STOP	WS407CCV	630	IVE
3	EA	SILENCER	SR64	GRY	IVE

HW SET: 20

3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	STOREROOM LOCK	L9080T 17A	626	SCH
1	EA	PRIMUS CORE ONLY	20-740-XP	626	SCH
1	EA	SURFACE CLOSER	SC71 HW/PA	689	FAL
1	EA	KICK PLATE	8400 10" X 2" LDW	630	IVE
1	EA	WALL STOP	WS407CCV	630	IVE
1	SET	SEALS	INTEGRAL SEALS BY FRAME MFR.		B/O

HW SET: 21

3	EA	HINGE	5BB1 4.5 X 4.5 NRP	630	IVE
1	EA	PANIC DEVICE	25-R-L-NL	630	FAL
1	EA	PRIMUS CORE ONLY	20-740-XP	626	SCH
1	EA	MORTISE CYLINDER	26-091-ICX	626	SCH
1	EA	SURFACE CLOSER	SC71 SS/HO	689	FAL
1	EA	KICK PLATE	8400 10" X 2" LDW	630	IVE
1	SET	SEALS	700SA	AL	NGP
1	EA	DOOR SWEEP	C627A	AL	NGP
1	EA	THRESHOLD	8426	AL	NGP

HW SET: 22

3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	CLASSROOM LOCK	L9070T 17A	626	SCH
1	EA	PRIMUS CORE ONLY	20-740-XP	626	SCH
1	EA	SURFACE CLOSER	SC71 RW/PA	689	FAL
1	EA	WALL STOP	WS407CCV	630	IVE
1	SET	SEALS	INTEGRAL SEALS BY FRAME MFR.		B/O

HW SET: 23

3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	CLASSROOM LOCK	L9070T 17A	626	SCH
1	EA	PRIMUS CORE ONLY	20-740-XP	626	SCH
1	EA	SURFACE CLOSER	SC71 RW/PA	689	FAL
1	EA	KICK PLATE	8400 10" X 2" LDW	630	IVE
1	EA	WALL STOP	WS407CCV	630	IVE

HW SET: 24

6	EA	HINGE	5BB1 4.5 X 4.5 NRP	652	IVE
1	EA	FIRE EXIT DEVICE	F-25-V-EO	630	FAL
1	EA	FIRE EXIT DEVICE	F-25-V-L	630	FAL
1	EA	PRIMUS CORE ONLY	20-740-XP	626	SCH
1	EA	MORTISE CYLINDER	26-091-ICX	626	SCH
2	EA	SURFACE CLOSER	SC71 DS	689	FAL
2	EA	KICK PLATE	8400 10" X 2" LDW	630	IVE

HW SET: 25

3	EA	HINGE	5BB1 4.5 X 4.5 NRP	652	IVE
1	EA	FIRE EXIT DEVICE	F-25-R-L	630	FAL
1	EA	PRIMUS CORE ONLY	20-740-XP	626	SCH
1	EA	MORTISE CYLINDER	26-091-ICX	626	SCH
1	EA	SURFACE CLOSER	SC71 DS	689	FAL
1	EA	KICK PLATE	8400 10" X 2" LDW	630	IVE

HW SET: 26

3	EA	HINGE	5BB1 4.5 X 4.5 NRP	652	IVE
1	EA	CLASSROOM LOCK	L9070T 17A	626	SCH
1	EA	PRIMUS CORE ONLY	20-740-XP	626	SCH

1	EA	SURFACE CLOSER	SC71 HO/DS	689	FAL
1	EA	MOUNTING PLATE	SC70-18PA	689	FAL
1	SET	SEALS	INTEGRAL SEALS BY FRAME MFR.		B/O

HW SET: 27

3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	STOREROOM LOCK	L9080T 17A	626	SCH
1	EA	PRIMUS CORE ONLY	20-740-XP	626	SCH
1	EA	SURFACE CLOSER	SC71 HO/DS	689	FAL
1	EA	KICK PLATE	8400 10" X 2" LDW	630	IVE
1	SET	SEALS	INTEGRAL SEALS BY FRAME MFR.		B/O

HW SET: 28

3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	CLASSROOM LOCK	L9070T 17A	626	SCH
1	EA	PRIMUS CORE ONLY	20-740-XP	626	SCH
1	EA	DOME STOP	FS436	626	IVE
1	SET	SEALS	INTEGRAL SEALS BY FRAME MFR.		B/O

HW SET: 29

3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	CLASSROOM LOCK	L9070T 17A	626	SCH
1	EA	PRIMUS CORE ONLY	20-740-XP	626	SCH
1	EA	WALL STOP	WS407CCV	630	IVE
3	EA	SILENCER	SR64	GRY	IVE

HW SET: 30

3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	CLASSROOM LOCK	L9070T 17A	626	SCH
1	EA	PRIMUS CORE ONLY	20-740-XP	626	SCH
1	EA	DOME STOP	FS436	626	IVE
3	EA	SILENCER	SR64	GRY	IVE

HW SET: 31

6	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
2	EA	MANUAL FLUSH BOLT	FB458	626	IVE
1	EA	DUST PROOF STRIKE	DP2	626	IVE
1	EA	CLASSROOM LOCK	L9070T 17A	626	SCH
1	EA	PRIMUS CORE ONLY	20-740-XP	626	SCH
1	EA	SURFACE CLOSER	SC71 HW/PA	689	FAL
2	EA	KICK PLATE	8400 10" X 2" LDW	630	IVE
2	EA	DOME STOP	FS436	626	IVE
1	EA	SEALS	5060B 7'	BRN	NGP
1	SET	SEALS	INTEGRAL SEALS BY FRAME MFR.		B/O

HW SET: 32

6	EA	HINGE	5BB1 4.5 X 4.5 NRP	652	IVE
2	EA	MANUAL FLUSH BOLT	FB458	626	IVE
1	EA	DUST PROOF STRIKE	DP2	626	IVE
1	EA	STOREROOM LOCK	L9080T 17A	626	SCH
1	EA	PRIMUS CORE ONLY	20-740-XP	626	SCH
1	EA	SURFACE CLOSER	SC71 HO/DS	689	FAL
2	EA	KICK PLATE	8400 10" X 2" LDW	630	IVE
1	EA	DOME STOP	FS436	626	IVE
2	EA	SILENCER	SR64	GRY	IVE

HW SET: 33

6	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
2	EA	PANIC DEVICE	25-C-L-BE-LBR	630	FAL
2	EA	SURFACE CLOSER	SC71 DS	689	FAL
2	EA	MOUNTING PLATE	SC70-18PA	689	FAL
1	SET	SEALS	INTEGRAL SEALS BY FRAME MFR.		B/O

HW SET: 34

6	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	SET	AUTO FLUSH BOLT	FB31P	630	IVE
1	EA	DUST PROOF STRIKE	DP2	626	IVE
1	EA	OFFICE LOCK	L9050T 17A	626	SCH
1	EA	PRIMUS CORE ONLY	20-740-XP	626	SCH
1	EA	COORDINATOR	COR X FL	628	IVE
2	EA	MOUNTING BRACKET	MB2	689	IVE
2	EA	SURFACE CLOSER	SC71 DS	689	FAL
2	EA	MOUNTING PLATE	SC70-18PA	689	FAL
1	SET	SEALS	INTEGRAL SEALS BY FRAME MFR.		B/O

HW SET: 35

3	EA	HINGE	5BB1 4.5 X 4.5 NRP	630	IVE
1	EA	STOREROOM LOCK	L9080T 17A	626	SCH
1	EA	PRIMUS CORE ONLY	20-740-XP	626	SCH
1	EA	SURFACE CLOSER	SC71 SS/HO	689	FAL
1	SET	SEALS	700SA	AL	NGP
1	EA	DOOR SWEEP	C627A	AL	NGP
1	EA	THRESHOLD	8426	AL	NGP

HW SET: 36

3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	CLASSROOM LOCK	L9070T 17A	626	SCH
1	EA	PRIMUS CORE ONLY	20-740-XP	626	SCH

1	EA	SURFACE CLOSER	SC71 DS	689	FAL
1	SET	SEALS	107SA	AL	NGP
1	EA	DOOR BOTTOM	220SA	AL	NGP
1	EA	THRESHOLD	950S	AL	NGP

END OF SECTION